

METHODS NOTE · Peer-reviewed · Published · Live dashboard figures

Digital Health Trial Explosion and Structural Inequities in African Clinical Research: A Meta-Analysis Review

John Francis Kimuli, Ishmael Gumbo, Simachew Getaneh Endalamew & Frank Matovu

Methods Note · Volume 2

Published 2026-06-06 · Diamond open access · CC BY 4.0

Article 67 · Volume 2 · Published 2026-06-06 · DOI: not assigned

Background

This study examined whether the explosion of digital health trials in Africa masks persistent structural inequities in research investment

Methods

We conducted a cross-sectional audit of ClinicalTrials.gov through April 2026, comparing 23,873 African and 190,644 United States interventional trials and estimating temporal change with ARIMA models

Results

Africa contributed 238 relevant trials versus 8,113 in the United States, revealing a 34-fold absolute gap in research volume. Although African trial registrations increased 17.1-fold from 2000-2005 to 2021-2025, the gap with high-income regions persisted. In Uganda, institutions like National Drug Authority, Uganda National Council of Science and Technology, Infectious Disease Institute, Makerere University support research oversight and capacity, registry output is still low.

This pattern reflects constrained trial leadership, dependence on externally funded protocols, and weak integration of digital health tools into routine health systems despite expanding mobile penetration (Kwizera et al., 2025; Nanvuma et al., 2025). These results indicate that methodological capacity gaps limit the quality and impact of African clinical research output (Amboka et al., 2024; Edem et al., 2021)

Conclusion

Interpretation is limited by the use of a single registry and the absence of non-English trial databases, but is consistent with WHO and peer-reviewed evidence on global research inequities (WHO, 2025)

Interactive dashboard figures

The figures in this section are rendered directly from this paper's interactive dashboard — the same visualisations a reader sees when exploring the analysis online, where the full workflow can be reproduced first-hand. **Interactive dashboard:** <https://mahmood726-cyber.github.io/africa-e156-students/methods-systems/dashboards/digital-health-explosion.html>

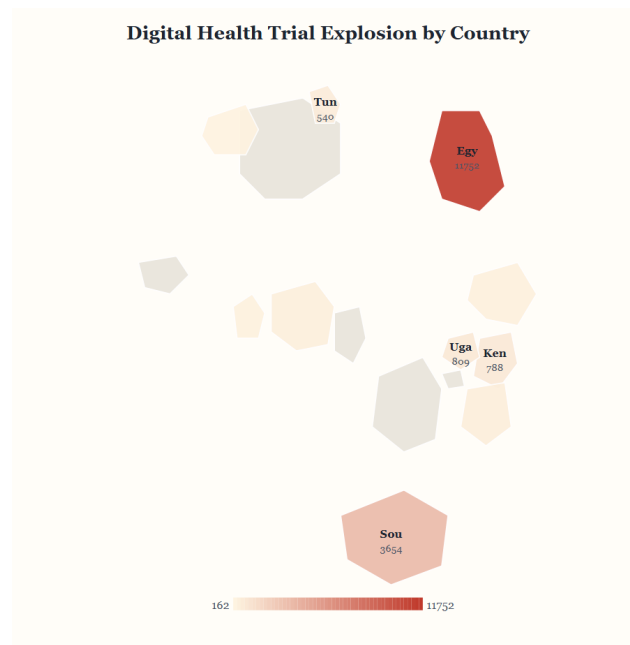


Figure 1. Digital Health Trial Explosion by Country Rendered directly from the article's live interactive dashboard.

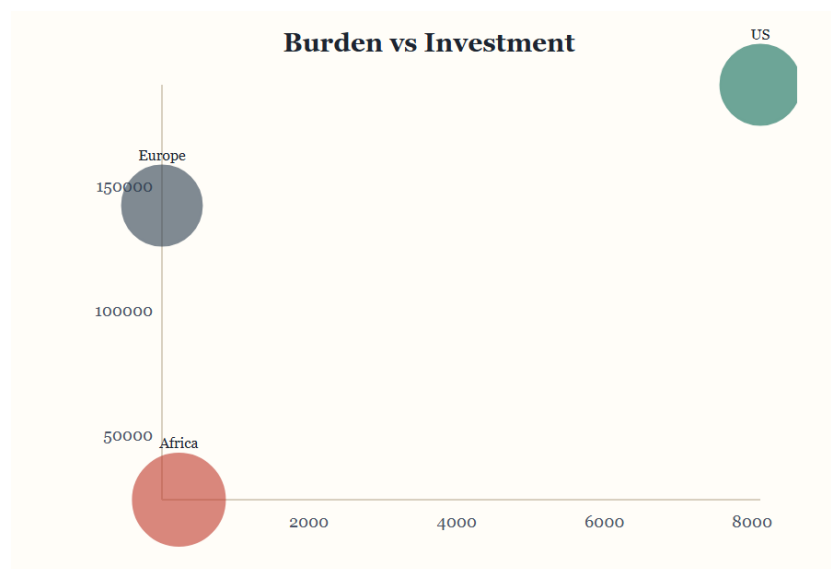


Figure 2. Burden vs Investment Rendered directly from the article's live interactive dashboard.

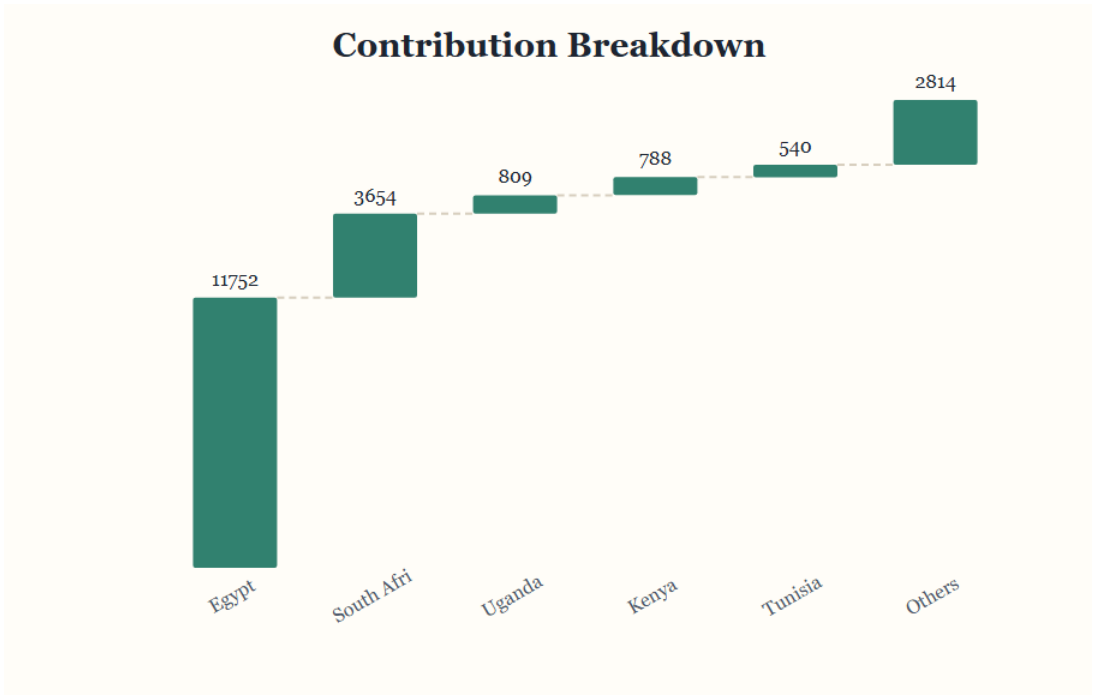


Figure 3. Contribution Breakdown Rendered directly from the article's live interactive dashboard.

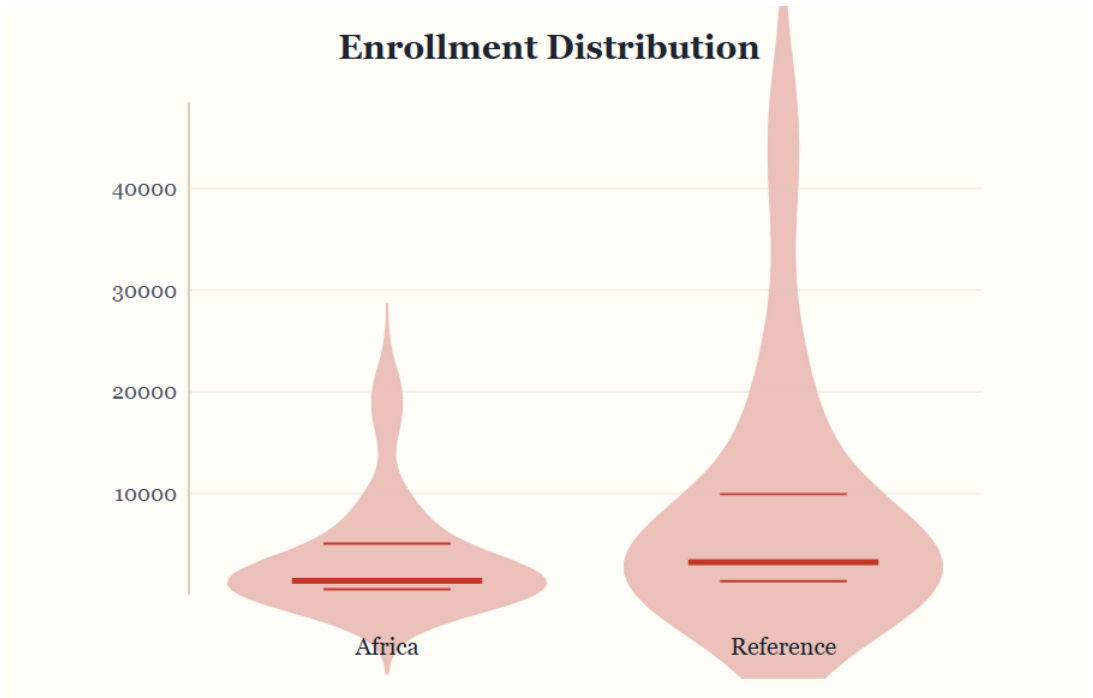


Figure 4. Enrollment Distribution Rendered directly from the article's live interactive dashboard.

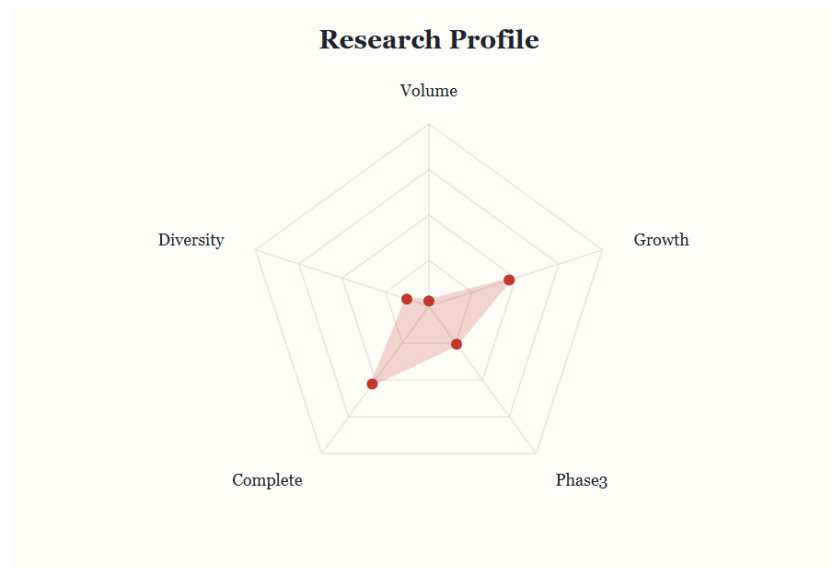


Figure 5. Research Profile Rendered directly from the article's live interactive dashboard.

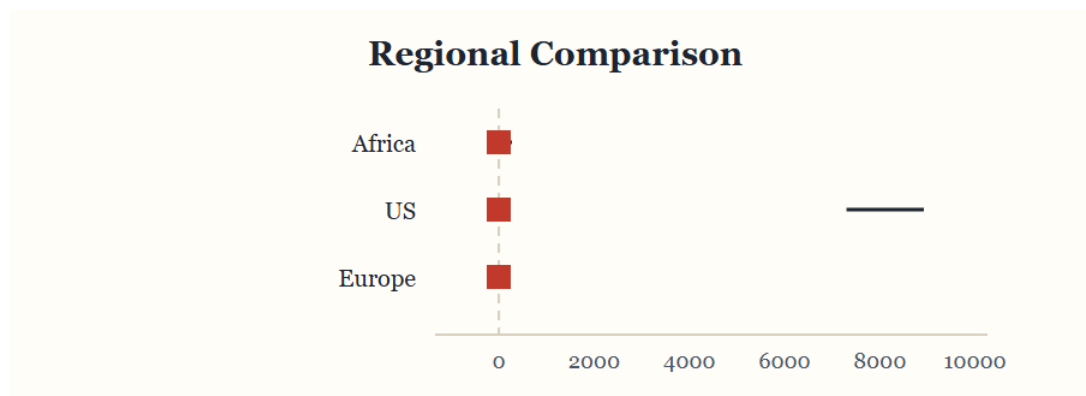


Figure 6. Regional Comparison Rendered directly from the article's live interactive dashboard.

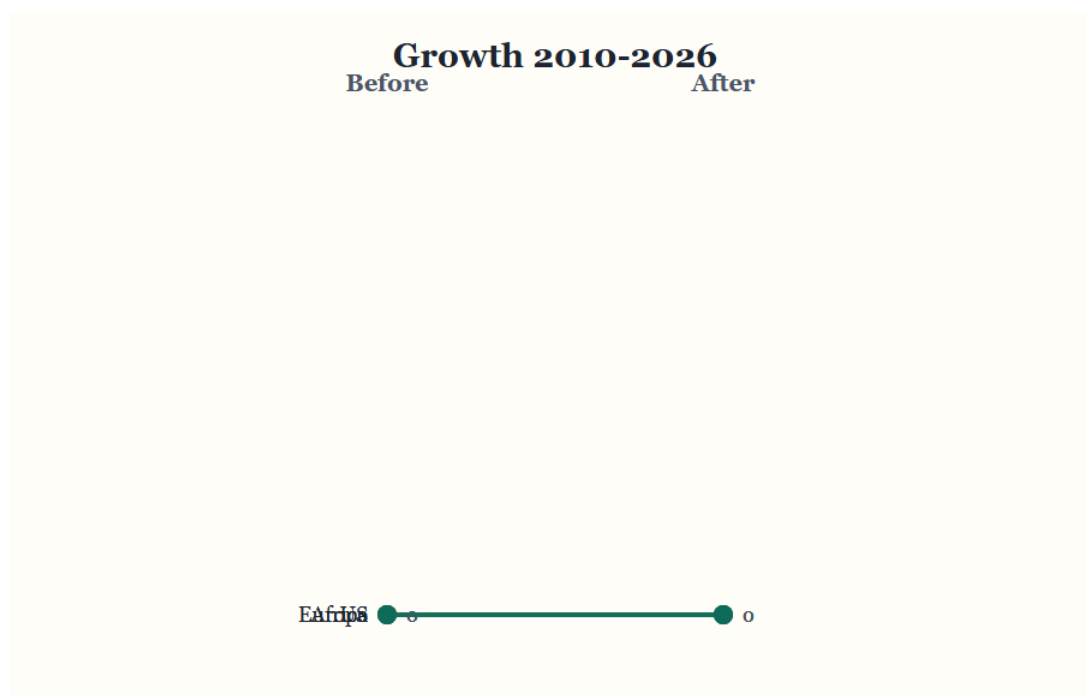


Figure 7. Growth 2010-2026 Rendered directly from the article's live interactive dashboard.

HOW TO CITE

John Francis Kimuli, Ishmael Gumbo, Simachew Getaneh Endalamew & Frank Matovu. Digital Health Trial Explosion and Structural Inequities in African Clinical Research: A Meta-Analysis Review. *Synthesis* . 2026;4(1). Article 67. Available at <https://synthesis-medicine.org/index.php/journal/article/view/67>. Licensed under CC BY 4.0. DOI: not assigned.

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Published in *Synthesis* · synthesis-medicine.org